REMARKS

Claim 7 stand objected to because, in view of the pretension force being greater than the axial thrust, it is not clear to the examiner how axial movement is possible. This will now be clarified.

The pretension force is chosen to be greater than the axial thrust exerted by the electromechanical linear drive so that the thrust transmitted by the device onto a linearly moved screw cannot destabilize the bearing of the rotor. The running stability is therefore improved (see paragraph [0009]). The description on page 8, paragraph [0017] only states how spindle nut 8 and spindle shaft 7 cooperate. Clearly the spindle nut 8, which is prevented from rotating should advance or retract according to the direction of rotation imposed by the hollow shaft rotor 5 on the spindle shaft 7 with which the nut is in threaded engagement. By pretensioning the bearings 11, 12 supporting the hollow shaft rotor 5 (rotatably but not axially movable) so that the pretensioning force is greater than the maximum axial thrust which can be exerted by the spindle nut 8, the rotor is further stabilized even under variable axial loads (see paragraph [0018]).

Claim 1 has been amended to make it clear that the two axially pretensioned bearings provide the sole support for the rotor with respect to the stator when the rotor is concentric to the stator, and that the anti-contact device prevents contact between the rotor and the stator in the event of eccentric deflection of the rotor with respect to the stator.

Claim 6 has been amended to recite that the three radial bearings of the radial contact device support the rotor radially in the event of eccentric deflection of the rotor with respect to the stator.

Claims 1 and 4-6 stand rejected under 35 U.S.C. §103 as being unpatentable over EP 723848 in view of Potter U.S. 3,508,241. To the extent that these references would be applied against claims as presently amended, such rejection is traversed for the reasons following.

EP '848 discloses an injection apparatus including a metering motor 44 which rotates a screw 22, and an injection motor 45 which drives the screw axially. The motor 44 has a rotor 47 fitted to a hollow rotor shaft 56 with two open ends; there is no closed end and no central bearing journal, so this motor is not relevant to the present invention.

The motor 45 has a rotor 49 fitted to a hollow rotor shaft 57 with an open end which is radially supported by a bearing 53 and is a closed end which is radially supported by a bearing 54. A journal extending from the closed end is supported axially against a single thrust bearing 66, and is also supported radially by a bearing 67. There are no two bearings which are axially pretensioned and provide the sole support for the rotor with respect to the stator when the rotor is concentric to the stator. Since the bearings 53, 54 provide support for the rotor shaft 57 with respect to the housing 11 at all times, there is no possibility of eccentric running and no need for an anti-contact device as recited in applicant's claim 1.

Potter discloses a dynamoelectric machine having a rotor which is supported concentrically with respect to a stator by a pair of main bearings 4, 5. There is no helical gear for converting rotation to linear movement. Potter has nothing to do with driving an injection screw and is not from the same field of endeavor. There are no axially pretensioned bearings which provide the sole support when the rotor is concentric to the stator. The auxiliary bearings 25, 35 are effective only when the main bearings fail. As much as Potter appears to suggest is a pair of auxiliary bearings outside the bearings 53, 54 of EP '848.

Neither reference suggests a rotor having an open end and a closed end with a journal extending therefrom, wherein a pair of axially pretensioned bearings support the journal and provide the sole support for the rotor with respect to the stator during concentric running.

DE 39 41 111, cited against claim 3, shows a pair of spaced apart bearings 4, 5 which provide radial support for a solid shaft 2. Bolyard U.S. 6,334,554, cited against claim 3, merely shows three bearing members 190 which support a valve stem 144, and likewise adds nothing to suggest the features of claim 1.

The allowability of claims 5 and 7-9 is noted with appreciation. However in view of the amendment and the foregoing argument it is earnestly believed that claim 1 defines patentably over the art of record, wherefore withdrawal of the rejections and early allowance are solicited. If any objections remain, a call to the undersigned is requested.

It is believed that no fees or charges are required at this time in connection with the present application; however, if any fees or charges are required at this time, they may be charged to our Patent and Trademark Office Deposit Account No. 03-2412.

Respectfully submitted,

COHEN, PONTANI, LIEBERMAN & PAVANE

By 

F. Brice Faller
Reg. No. 29,532
551 Fifth Avenue, Suite 1210
New York, New York 10176
(212) 687-2770

Dated: January 5, 2005